

# Large UK population study finds no increased cancer risk in children born after assisted conception

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Children born as a result of assisted reproduction (ART) are at no greater risk of cancer than children born spontaneously in the general population, according to results of one of the largest ever cohort studies of ART children. "This is reassuring news for couples considering assisted conception, their subsequent children, fertility specialists and for the wider public health," said the investigators.

Results of the study were presented today at the annual meeting of ESHRE by Dr Carrie Williams from the Institute of Child Health, University College London, UK.

This was a large population-based [linkage study](#) between the Human Fertilisation & Embryology Authority (HFEA, the UK's regulatory authority for ART clinics) and the UK's National Registry of Childhood Tumours (NRCT).(1) The HFEA records of all 106,381 children born after assisted conception in the UK from 1992 to 2008 were linked to NRCT records to calculate the number of children who subsequently developed [cancer](#). Once the databases were linked, cancer rates in the ART cohort were compared with population rates, whilst stratifying for potential mediating factors including birth weight, multiple births, treatment type and infertility cause. The average duration of follow up was 6.6 years.

Results showed that there was no overall increased risk of cancer in ART

children born throughout the 17-year study period. Overall, 108 cancers were identified in the ART children, which was comparable with the 109.7 cases which would have been expected from [general population](#) figures.

However, increased risks were found for the development of certain rare cancer types, though these findings were based on small numbers and the absolute excess risks were small. For instance, significantly more children developed hepatic tumours than expected (6 vs. 1.83), which translated to an added excess risk of 5.94 per million person-years. This excess risk was also associated with a low birth weight.

However, none of the children born after assisted conception who did develop cancer were recorded as having a co-morbidity consistent with an imprinting disorder. This again, said the [investigators](#), is reassuring. The possibility of an increased cancer risk in ART children has been suggested by the discovery of altered epigenetic patterns in embryos.(2)

Commenting on the results, the study's principal investigator, Associate Professor Alastair Sutcliffe from the Institute of Child Health in London, said: "This is the largest study of its kind to be reported and is unique in that the data are derived from a single country and in a homogeneous population. The absence of cancer in children - or in adults - can be considered a measure of long-term health resilience, so we are happy to report that in the country where IVF was first successfully applied there is no convincing evidence that ART children are at any greater risk of cancer than those naturally conceived.

"It is true that we found increased risks of a few rare cancers, but these would need to be studied across large international datasets to confirm if they were genuine findings or just an effect of their very rareness."

Professor Sutcliffe described the overall study results as a "useful

bellwether" [guide} for the health of ART children, and future studies will address other unresolved questions over the safety of IVF for mothers and their children.

A similar though smaller study reported at this congress produced comparable findings.(3) The CoNARTaS cohort study from three Nordic countries also found that children and young adults born after IVF had no overall increased risk of cancer when compared with children in the general population. The study group comprised 92,809 children born after IVF between 1982 and 2007 (61,547 singletons and 31,262 multiples), and a matched control group from the general population four times greater in number. Data on perinatal outcomes and cancer were obtained by linkage to national registries.

A cancer diagnosis occurred in 143 children born after IVF (19/1000) and in 626 (18/1000) children in the control group. The most common cancer diagnosis was leukaemia, which occurred in 6/1000 children born after IVF and in 5/1000 in the control group.

Provided by European Society of Human Reproduction and Embryology

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